spondence in the serrated form of the edges of the teeth, in the ridges on their vertical surfaces, and particularly in the manner in which the new teeth are formed in lateral cavities at the base of the fangs of the old ones.

From the nature of the fossils with which these teeth are associated, the author concludes the Iguanodon to have been, if amphibious yet not marine, but an inhabitant of rivers and fresh-water lakes. Judging from the proportions of the recent iguana, he concludes that some of the fossil teeth figured in his paper must have belonged to an individual upwards of 60 feet long.

The author then considers the vertebræ, which differ materially from those of the recent iguana, crocodile, &c., and resemble rather those of the fossil crocodiles of Havre and Honfleur, being depressed at both extremities; but, as among recent lacertæ there are examples of the same structure in a higher degree, and the fossils in question are clearly of the saurian type, he does not regard the discrepancy as sufficiently important to invalidate the conclusions attempted to be established in this paper.

An experimental enquiry into the Nature of the radiant heating effects from terrestrial sources. *By* Baden Powell, *M.A. F.R.S. of Oriel College, Oxford.* Read February 17, 1825. [*Phil. Trans.* 1825, *p.* 187.]

In this paper the author first states the opinion of various preceding experimenters on the subject of the heat evolved from non-luminous sources, and from bodies in various degrees of luminosity, and observes that all the facts may be accounted for, by supposing two distinct heating influences, one associated in some very close way with the rays of light, and carried as it were by them through a glass screen without heating it, the other being merely simple radiant heat affected by the screen, exactly as the radiant heat from a non-luminous body.

In order to examine the truth of this explanation, he observes further, that it is not sufficient to observe the effects produced by the intervention of the screen alone, we must combine this with an inquiry into the relations to surfaces of the portions of the heat stopped and transmitted; that is to say, we must endeavour to discover whether the portions differ in any other respect than merely in transmissibility.

To this end the author institutes a set of experiments, whose general principle he states to be, "taking different luminous hot bodies, to expose to their influence two thermometers presenting, one a smooth black surface, the other an absorptive white one: thus obtaining the ratio of their total direct effects on the two, we may compare it with the ratio similarly observed, when a transparent screen is interposed."

After noticing some causes of fallacy necessary to be guarded

against, he proceeds to describe his apparatus, which consisted of two thermometers, A and B, of large and nearly equal bulbs graduated to quarters of centigrade degrees, one whitened with a wash of chalk and water, the other blackened with Indian ink. In other experiments a differential thermometer was used, one ball being only exposed to the heating influence under various coatings, and the other carefully screened, so as to reduce the effect as much as possible to that on a mere air thermometer.

A variety of experiments on the heating effects of various flames, incandescent metals, &c., on these thermometers so prepared, and both screened and unscreened with glass plates, are then detailed; and the author then draws his general conclusions, which may be thus stated.

1. That the heat radiated from all luminous hot bodies is divided or analysed by a glass screen into two portions, one of which is stopped by the screen, and employed in increasing its temperature, and the other passes through it without raising its temperature.

2. That besides this difference in the nature of the two portions of the total radiation, they differ in their capabilities of being absorbed by the surfaces of bodies. That portion which passes freely through glass being absorbed much more readily by blackened surfaces, while the other, or non-transmissible portion, is nearly equally well absorbed by black and white surfaces. The texture of surfaces, rather than their colour, he supposes to exercise the chief influence in determining the absorption of this latter portion, though this last-mentioned opinion is, perhaps, rather adopted in conformity with the language of others, than in consequence of any experiments detailed in the present paper.

On the Anatomy of the Mole-cricket. *By* J. Kidd, *M.D. and F.R.S. Reg. Prof. of Medicine in the University of Oxford.* Read February 3 and February 10, 1825. [*Phil. Trans.* 1825, *p.* 203.]

The insect described in this paper is common in certain peat bogs a few miles west of Oxford, and is found within 18 inches of the surface. Like the mole, its limbs are particularly calculated for burrowing; and to prevent the necessity of its excavating a passage large enough to admit of its turning round, it has the power of moving as easily in a retrograde as in a progressive direction. Its colour closely resembles that of the mould in which it lives; and in common with many other insects, it has the power of assuming a lifeless appearance when suddenly disturbed. Having kept some of them in glass vessels for several weeks, the author remarked that they preferred the potatoe to other vegetable food, but that they attacked raw meat with especial greediness, and upon emergency attacked each other, in which case the victor soon devoured the fleshy and soft parts of the vanquished. But although they are very voracious, they are equally remarkable for their power of abstaining from food, and have been